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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,829	03/29/2007	Frank Schmidt	117842-003	1032
29176	7590	03/21/2011	EXAMINER	
K&L Gates LLP			VORTMAN, ANATOLY	
P.O. BOX 1135			ART UNIT	
CHICAGO, IL 60690			PAPER NUMBER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/596,829

Applicant(s)

SCHMIDT ET AL.

Examiner

ANATOLY VORTMAN

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12 and 14-24 is/are pending in the application.
- 4a) Of the above claim(s) 23 and 24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12 and 14-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 June 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Reply Under 37 CFR 1.111

1. The submission of the amendment filed on 02/09/11 to the non-final Office action of 08/09/10 is acknowledged. Claims 12 and 14-24 are pending in the instant application. Claims 23 and 24 have been withdrawn from further consideration as non-elected. The Office action on claims 12 and 14-22 follows.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 12 and 14-22, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The independent claim 12 contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 12 recites the limitations: “wherein the insulating fibre of each of the second windings is adjacent a surface of the fusible wire of a subsequent one of the second windings”. It is not clear how the insulating fibre (i.e. the second winding) can be adjacent to itself (i.e. to the fusible wire of a subsequent one of the second windings), if as recited in said claim 12 earlier, the plurality of

the first windings are formed by the fusible wire and “an electrically insulated fibre wound about the core forming a plurality of second windings disposed between each of said plurality of fusible wire windings” (emphasis added). Further, it can be clearly seen from Fig. 2 of the instant application, that the insulating fibre (3A, B) of each of the second windings is adjacent a surface of the fusible wire (2A, 2B) of a subsequent one of the first windings, not the second winding as claimed. Therefore, the structure as recited in the amended claim 12 is not enabled and a person of ordinary skill in the relevant art will not be able to make and use the claimed invention without resorting to undue experimentation. See *In re Brown*, 477 F.2d 946, 177 USPQ 691 (CCPA 1973); *In re Ghiron*, 442 F.2d 985, 169 USPQ 723 (CCPA 1971).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

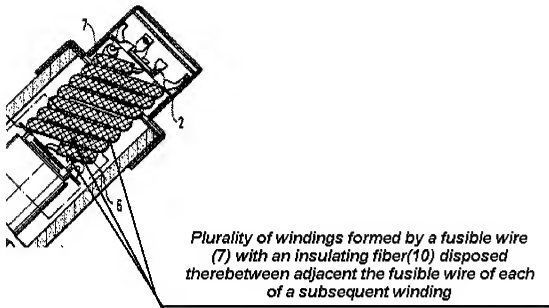
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 12, as best understood, is rejected under 35 U.S.C. 102(b) as being anticipated by US/4,523,172 to Drothen et al. (Drothen).

Regarding claim 12, as best understood, Drothen disclosed (Fig. 2-3) a fusible conductor for a fuse element, said fusible conductor comprising: an electrically insulating core (6); a fusible wire (7) wound about and in contact (at least thermal) with the core (6) forming as a plurality of

first windings; and an electrically insulating fiber (10, 11) wound about the core forming a plurality of the second windings and disposed between each of said plurality of the first windings such that the insulating fiber is adjacent a fusible wire of a subsequent winding (see annotated figure below):

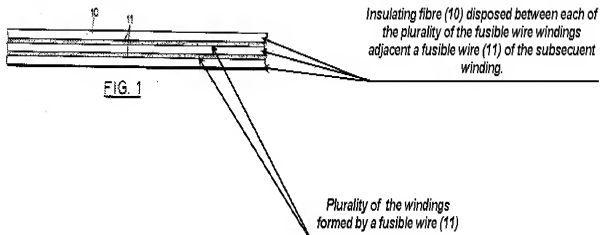


6. Alternatively, claim 12, as best understood, is rejected under 35 U.S.C. 102(b) as being anticipated by US/ 3,486,155 to MCCAUGHNA.

Regarding claim 12, MCCAUGHNA disclosed (Fig. 1, 2) disclosed (Fig. 2-3) a fusible conductor for a fuse element, said fusible conductor comprising: an electrically insulating core (12); a fusible wire (11) wound about and in contact (at least thermal) with the core (12) forming a plurality of first windings; and an electrically insulating fiber (10) wound about the core forming a plurality of second windings and disposed between each of said plurality of the first

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windings such that the insulating fiber of each of the second winding is adjacent a surface of the fusible wire of a subsequent one of the first windings (see annotated figure below):



Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 14-23, are rejected under 35 U.S.C. 103(a) as being unpatentable over US/4,523,172 to Drothen taken alone.

Regarding claims 14-16, Drothen disclosed all as applied to claim 13 above, and further, that both fusible wires and one insulating fiber have an approximately circular cross section (Fig.

3b), but did not specify the ranges for the ratio of the diameter of the fusible wire to that of the insulating fiber (i.e. between $1/3$ and 3, or between 1 and 3), and for the spacing between the turns of the fusible wire (i.e. 0.2 to 2 times the diameter of the fusible wire).

It would have been obvious to a person of the ordinary skill in the fuse art at the time of the invention to select any appropriate ranges for the aforementioned ratio and for the spacing, including as claimed, or any suitable value within said claimed ranges, in order to achieve the desired mechanical and electrical properties of the fusible conductor, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In *re Aller*, 105 USPQ 233. Further, it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In *re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). All claimed elements and methods have been known in the prior art at the time of the invention, and one skilled in the fuse art could have modified the elements as claimed by known methods with no change in their respective functions, and the modification would have yielded predictable results to one of ordinary skill in the art at the time of the invention. See *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, 82 USPQ2d 1385 (2007).

Regarding claim 17, Drothen disclosed that the spacing between the adjacent turns is smaller than the diameter of the fusible wire (Fig. 5).

Regarding claim 18, Drothen disclosed that the outer surface of the wound fusible wire (7) projects beyond the outer surface of the insulating fiber (10, 11) (Fig. 5).

Regarding claim 19, Drothen disclosed that the core (6) has a circular cross section and the cross sectional dimensions of the insulating fiber (10, 11) are smaller than the diameter of the core (Fig. 3b, 4, and 5).

Regarding claims 20-22, Drothen disclosed all as applied to claim 12, but the specific materials the insulating fiber and the core are made of (i.e. glass or ceramic fibers).

The glass and ceramic fibers have been well known in the fuse art at the time of the invention as good insulating materials. Therefore, it would have been obvious to a person of the ordinary skill in the fuse art at the time of the invention to select any appropriate well known insulating materials (including as claimed) to make said insulating fiber and core of the fuse of Drothen, in order to achieve the desired mechanical and electrical properties of the fusible conductor, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416. All claimed elements and methods have been known in the prior art at the time of the invention, and one skilled in the fuse art could have modified the elements as claimed by known methods with no change in their respective functions, and the modification would have yielded predictable results to one of ordinary skill in the art at the time of the invention. See KSR, *supra*.

Regarding claim 23, Drothen disclosed that said insulating fiber (11) is substantially flat (Fig. 3b). Alternatively, it would have been obvious to a person of the ordinary skill in the fuse art at the time of the invention to select any suitable shape for said insulating fiber in order to achieve desired mechanical / electrical characteristics of the fusible conductor, since the rational

that a particular shape is a design choice may be found in legal precedent: In re Dailey, 357 F.2d669, 149 USPQ 47 (CCPA 1966).

Response to Arguments

9. The Applicant's arguments, while being considered, are not persuasive. Claims as amended still read on the references applied against them, as shown in the rejection above. Further, the arguments are directed to claims as amended, wherein said amendment produced enablement problem as presented in the 35 USC 112/1 rejection above.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANATOLY VORTMAN whose telephone number is (571)272-2047. The examiner can normally be reached on Monday-Thursday, between 10:00 am and 8:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Jayprakash Gandhi can be reached on 571-272-3740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anatoly Vortman/
Primary Examiner, Art Unit 2835